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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,644	09/23/2003	Dale A. Harrison	METR:004	2039

7590 02/27/2007

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EXAMINER	
LEE, HWA S	
ART UNIT	PAPER NUMBER
2886	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/27/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/668,644	HARRISON, DALE A.	
	Examiner	Art Unit	
	Andrew Hwa S. Lee	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 September 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-90* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-44,46,50-52,54,57-60,64-66 and 68-90* is/are rejected.

7)☒ Claim(s) *45,47-49,53,55,56,61-63 and 67* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 6/16/07
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Remarks

1. Applicant's arguments with respect to claims 1-36, 75, and 80-83 have been considered but are moot in view of the new ground(s) of rejection.

2. The indicated allowability of claims 37-74 is withdrawn in view of the newly discovered reference(s). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 26-36 81-85 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claims are directed to a judicial exception, an abstract idea; as such, pursuant to the Interim Guidelines on Patent Eligible Subject Matter (MPEP 2106)), the claims must have either physical transformation and/or a useful, concrete and tangible result. The claims fail to include transformation from one physical state to another. Although, the claims appear useful and concrete, a tangible result is not claimed. Merely referencing the reflectance data is not sufficient to constitute a tangible result, since the outcome of the referencing step has not been used in a disclosed practical application (e.g. controlling the environment) nor made available (e.g. displayed on a computer monitor or stored on a computer readable medium) in such a manner that its usefulness in a disclosed practical application can be realized. As such, the subject matter of the claims is not patent eligible.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 3, 9, 10, 16, 25, and 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 9, "near-equal" is indefinite since the bounds of "near equal" is not clearly defined nor would a skilled artisan know what constitutes near equal.

With respect to claim 10, "sufficiently compact" is indefinite since the bounds of "sufficiently compact" is not clearly defined nor would a skilled artisan know what constitutes near equal.. Furthermore, "sufficiently compact" is made a relative term by the limitation that follows "sufficiently compact".

With respect to claims 25 and 31, "proximate in time" is indefinite since the bounds of "near equal" is not clearly defined nor would a skilled artisan know what constitutes near equal..

With respect to claims 3, 16, "the selection of individual channels" lacks antecedent basis.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible

harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1, 11, 22, 26, 33, 37, 75, 76, 81, 84, and 86 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 17-20 and 22 of U.S. Patent No. 7,026,626. Although the conflicting claims are not identical, they are not patentably distinct from each other for the reasons given with regards to limitations not given patentable weight as discussed below and U.S. Patent No. 7,026,626 claims the use of the reference channel in the reflectometer. Furthermore, limitations (e.g. array detectors) that are not disclosed by the claims of U.S. Patent No. 7,026,626 are well known (e.g. a calibration sample, shutters, etc.):

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-90 contain functional limitations and these limitations can be met by the prior art if the structure of the prior art is capable of performing the claimed functions.

2114 [R-1] Apparatus and Article Claims - Functional Language

APPARATUS CLAMS MUST BE STRUCTURALLY DISTINGUISHABLE FROM THE PRIOR ART

While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also In re Swinehart, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971); In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device is, not what a device does." Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original).

Limitations following "may be" and "to enable" are not positive limitations and thus are not given patentable weight.

4. Claims 1-13, 17 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Kotidis et al (US 5,781,304).

As to claims 1-8, 10-13, 17 and 20 Kotidis discloses a laser ultrasonics-based material analysis system the method comprising:

a light source (laser diode, 22) to create a sample channel light path (28b);

at least one reference channel light path (28a) that does not encounter a sample;

at least one optical element (80, 82) enabling or disabling the reference or sample light path:

a plurality of reflectometer system elements (see fig. 4) shared by both the sample and reference light paths; and

wherein the reference channel light path collects data that may be utilized to account for system or environmental changes to adjust the reflectance data obtained (col . 5, line 48-col. 6, line 15. col. 6, lines 32-52. and col. 8, lines 10-52).

As to claims 2-4, 8, 17, Kotidis discloses everything claimed, as applied above, in addition a beam may be used to establish the reference and sample light paths (see fig. 4 and col. 8, lines 64-68).

As to claim 5, Kotidis discloses everything claimed, as applied above, in addition the beam splitter is (28) is partially transmissive and the shutters are fully reflective (see fig. 2 and fig. 4) splitter (28) or shutters (20 and 82)

As to claims 6-7, 9, 12-13, Kotidis discloses everything claimed, as applied above, in addition the reference and sample channel light paths comprise balanced arms of an interferometer (col. 8, lines 52-60).

As to claims 10, Kotidis discloses everything claimed, as applied above, in addition the device is compact (col. 2, lines 19-25).

As to claim 20, Kotidis discloses everything claimed. as applied above. in addition the reference channel path does no! encounter an unknown sample or a calibration sample (col. 6, lines 32-47).

5. Claims 11, 14, 21-25, 27-36, 75, are 80-83 are rejected under 35 U.S.C. 102(e) as being anticipated by Nawracala (US 2001/0055118 A1).

As to claim 11, Nawracala discloses a self-calibrating measuring set-up for interference spectroscopy, comprising:

a light source (23) to create a sample channel light path (30) that encounters a sample;

means for referencing the reflectometer to enable an adjustment of reflectance data obtained from the sample to account for reflectometer changes (paragraph 39),

wherein the means for referencing includes a reference channel light path (31).

As to claim 14, Nawracala discloses everything claimed, as applied above, in addition one or more splitter devices (29) are used and the light is directed to common portions of a diffraction element (41, see fig. 2).

As to claim 22-25, Nawracala discloses a self-calibrating measuring set-up for interference spectroscopy, comprising:

providing a sample optical channel (30), providing a reference optical channel (31), a calibration sample (44), sharing common optical elements (see fig. 2) including a diffraction grating (41) and detector (42);

utilizing the reference channel to obtain reference data with the detector, the reference data indicative of system parameters and reference the reflectance data and obtaining the date with the sample reflectance (paragraphs 39-42).

As to claims 27-29, Nawracala discloses everything claimed as applied above, in addition a calibration sample is measured before and after measurement of the sample (paragraph 30).

As to claim 33, Nawracala discloses that time can change calibration data (paragraph 6 and 7) and multiple calibrations being taken.

As to claims 75 and 80-83, Nawracala discloses a self-calibrating measuring set-up for interference spectroscopy, comprising:

a light source (23) for providing a light beam;

a plurality of optical elements to direct light from a two-dimensional sample area (25, 27, 29);

a reference channel (31);

an optical element selectively enabling or disabling one of the reference channel or sample channel (paragraph 39);

a spectrometer (40) on both the sample and reference paths;

an array detector (42) in the sample and reference paths;

wherein the reference channel beam path collects data that may be used to account for system or environmental changes to adjust reflectance data (paragraph 39).

As to claims 15-16, Nawracala discloses everything claimed, as applied above, with the exception of optical shutters as controllable apertures, however to do so is well known as taught by Kotidis. Kotidis discloses a laser ultrasonics-based material analysis system the method that includes the use of optical shutters as controllable apertures (col. 8. lines 64-68). It would have been obvious to one having ordinary skill in the art at the time of invention to use optical shutters to controllably direct along individual paths.

6. Claims 1-5, 9-11, 14-16, 18-33, 36-44,46,50-52,54,57-61,64-66, 68-82, and 84-90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al (US 6,184,984).

Lee et al ("Lee" hereinafter) show a system for measuring polarimetric spectrum and other properties of a sample comprising:

a light source (10) to create a sample channel light path ();

at least one reference channel light path (48) that does not encounter a sample;

at least one optical element (10 or 95) enabling or disabling the reference or sample light path:

a plurality of reflectometer system elements (10, 22) shared by both the sample and reference light paths; and

wherein the reference channel light path collects data that may be utilized to account for system and environmental changes to adjust the reflectance data obtained.

Lee states that the reference path is used to improve the signal to noise ratio of the measurement, but does not expressly state how this is achieved, however, it is well known in the art that a reference path is used to improve the signal to noise ratio by subjecting the reference beam to the same conditions as the sample path except for interacting the reference beam with the sample. Thus the only difference between the sample beam from the reference beam is that the sample beam has interacted with the sample. All other effects such as environmental and system changes can be subtracted from the sample measurement. Thus the pathlength of both the sample and reference beam are near equal in length. Furthermore, Lee teaches the beam to be in the deep ultraviolet range (column 3, line 45+).

With regards to claims 33, 41, and 57, Lee shows all the limitations as discussed above and further shows the sample detector array is the same detector array used for the reference beam (column 5, lines 40+).

With regards to claims 25, 28, 31, 37, and38, Lee shows all the limitations as discussed above and further shows the sample and reference measurements are performed proximate in time.

With regards to claims 75, 89, and 90, Lee shows all the limitations as discussed above and further shows a spectrometer using a diffraction grating (70).

With respect to claims 2, 5, 14, 36, 42, 44, 50, 52, and 60, please see beam splitter (45).

With respect to claims 3, 4, 15, 16, 43, 51, and 59, please see column 11, lines 13-34, shutter 31 and aperture shown in figure 6.

With respect to claim 10, the apparatus is sufficiently compact.

With respect to claims 19, 39, 78, 79, 87, and 88, Official Notice is taken that environmentally controlled chambers are well known, and at the time of the invention, one of ordinary skill in the art would have put the apparatus in an environmentally controlled chamber in order to minimize harmful effects caused by temperature fluctuations that affect optical properties of the elements of the apparatus. As for the additional controlled chambers, lasers are housed in temperature controlled housings in order to stabilize the wavelength of the laser.

With respect to claim 24, 27, 30, 33, Official Notice is taken that reference samples (i.e. calibration samples) are well known in the art and at the time of the invention, one of ordinary skill in the art would have used a calibration sample in order to obtain a baseline or calibrate the apparatus.

With respect to claims 64 and 65, please see the parabolic mirror of spectrometer 322.

With respect to claim 66, the method of manufacturing is not given patentable weight since the claim does not further define the structure of the mirror.

With respect to claims 68 and 69, coatings used for reflective surfaces are well known in the art and at the time of the invention, one of ordinary skill in the art would have used a coating in order to make an efficient reflective surface.

With respect to claims 70 and 71, official notice is taken that CCDs are well known in the art, and at the time of the invention, one of ordinary skill in the art would have used a CCD for the detector array as CCDs are cost effective, sensitive, and compact.

With respect to claim 73, Lee teaches the use of two different light sources to condition the beam.

With respect to claim 85, please see column 3, line 49.

Allowable Subject Matter

Claims **45, 47-49, 53, 55, 56, 61-63, and 67 are** objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments with respect to Kotidis and Nawracala are not persuasive.

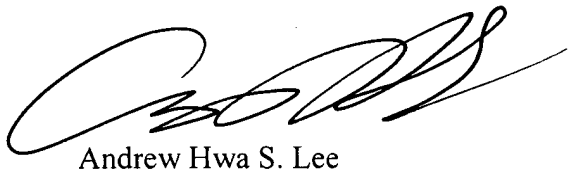
With respect to that Kotidis is drawn to an interferometer and that the reference beam is used in context of an interferometer, the apparatus of the present invention is also an interferometer and the claims do not distinguish between the reference beam of an interferometer and a reference beam not used in an interferometer. A reference arm of an interferometer inherently provides data used for comparison purposes that would account for system and environmental effects. Furthermore, the limitations recited in the arguments are not given patentable weight due to the use of "may be" and "to enable".

8. With respect to Nawracala failing to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., sample measuring setup) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Hwa S. Lee whose telephone number is 571-272-2419. The examiner can normally be reached on Tue-Fr.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley Jr. can be reached on 571-272-2800 ext 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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